

Drivers, Challenges and Opportunities For U.S. and Global Recycling Markets

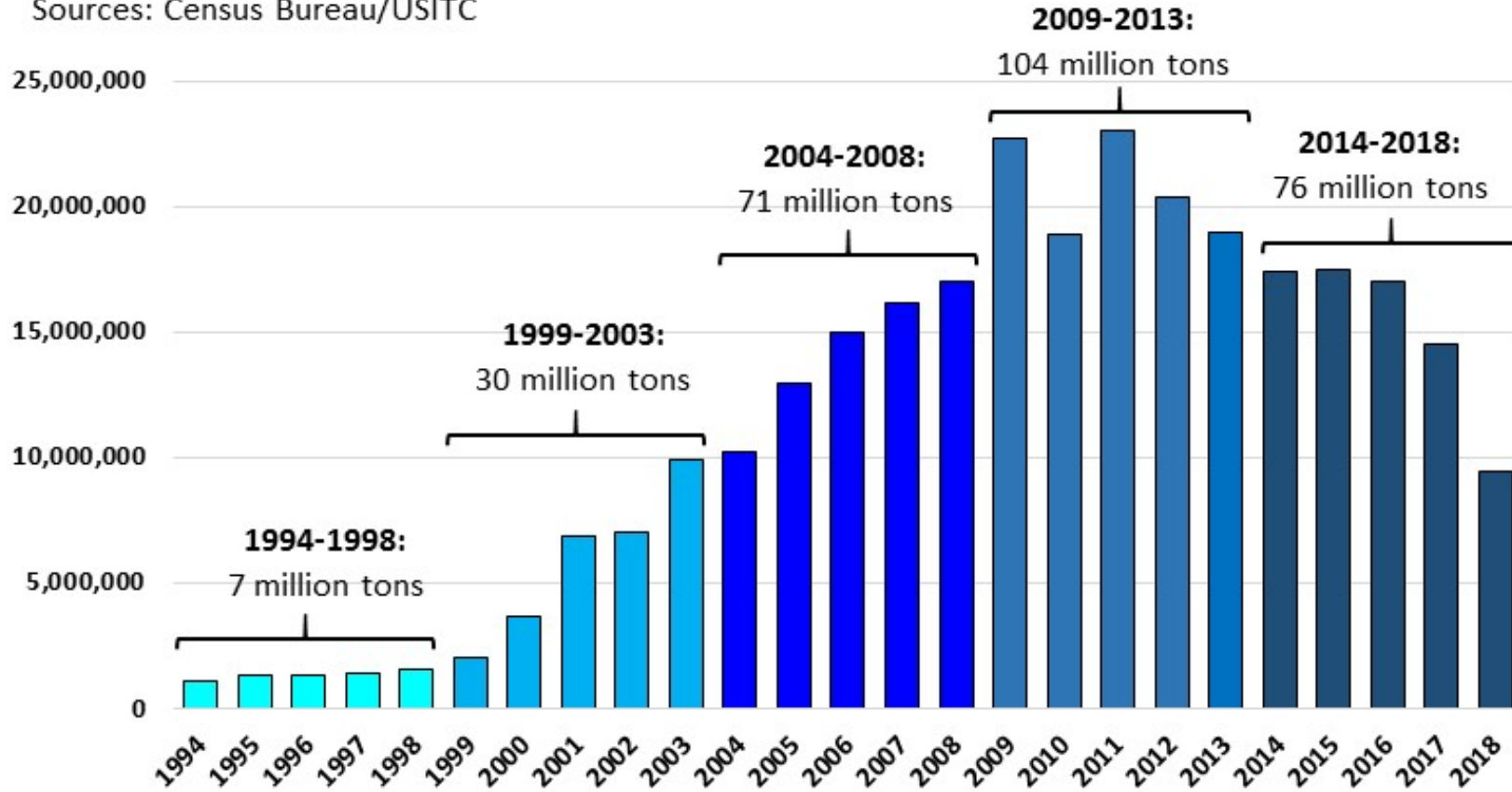
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Michigan Recycling Coalition
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China: The Key Driver for Global Commodity Markets

U.S. Exports of All Scrap Commodities to China (incl. Hong Kong) 1994-2018 (metric tons)

Sources: Census Bureau/USITC



Total U.S. Scrap Exports to China + HK (million mt)		
2017	2018	% CHG
14.5	9.5	-35%

U.S. Scrap Export Highlights in 2018

The top 5 markets in dollar value for U.S. scrap in 2018 were as follows:

1. **China** – \$3.5 billion (-38%)
2. **Canada** – \$2.3 billion (+6%)
3. **India** – \$1.5 billion (+63%)
4. **Mexico** – \$1.4 billion (23%)
5. **South Korea** – \$1.2 billion (+60%)

As U.S. scrap exporters developed new markets in response to China's pullback, India became the largest growth market last year in terms of net gain in export sales by value. The top 5 overseas growth markets in 2018 were:

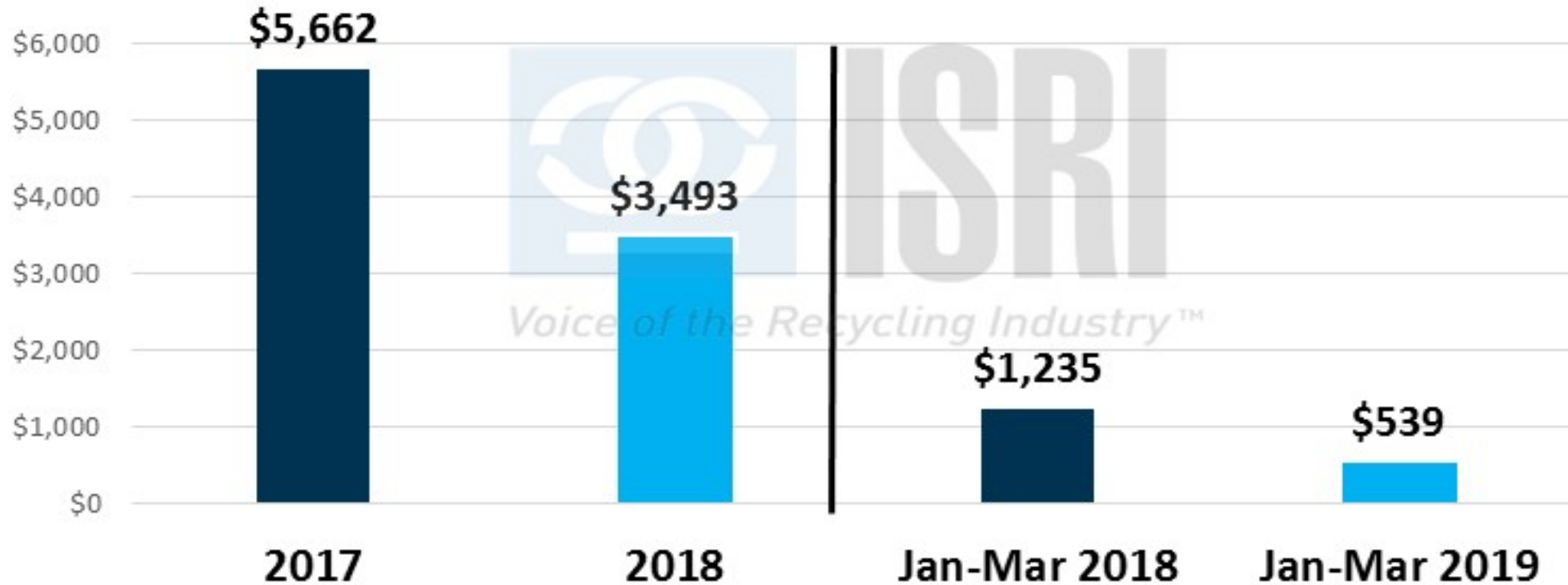
1. **India:** up \$586 million to \$1.5 billion
2. **Malaysia:** up \$550 million to \$736 million
3. **Taiwan:** up \$498 million to \$1.1 billion
4. **South Korea:** up \$465 million to \$1.2 billion
5. **Germany:** up \$319 million to \$1.2 billion

Other top growth markets in 2018 included the **U.K., Mexico, Indonesia, Belgium, Japan, Vietnam, Egypt, Canada, Thailand, and Bangladesh.**

U.S. Scrap Exports to China Still Falling (\$ millions)

FAS Value of Total U.S. Scrap Exports to Mainland China, 2017 - YTD 2019 (US\$ millions)

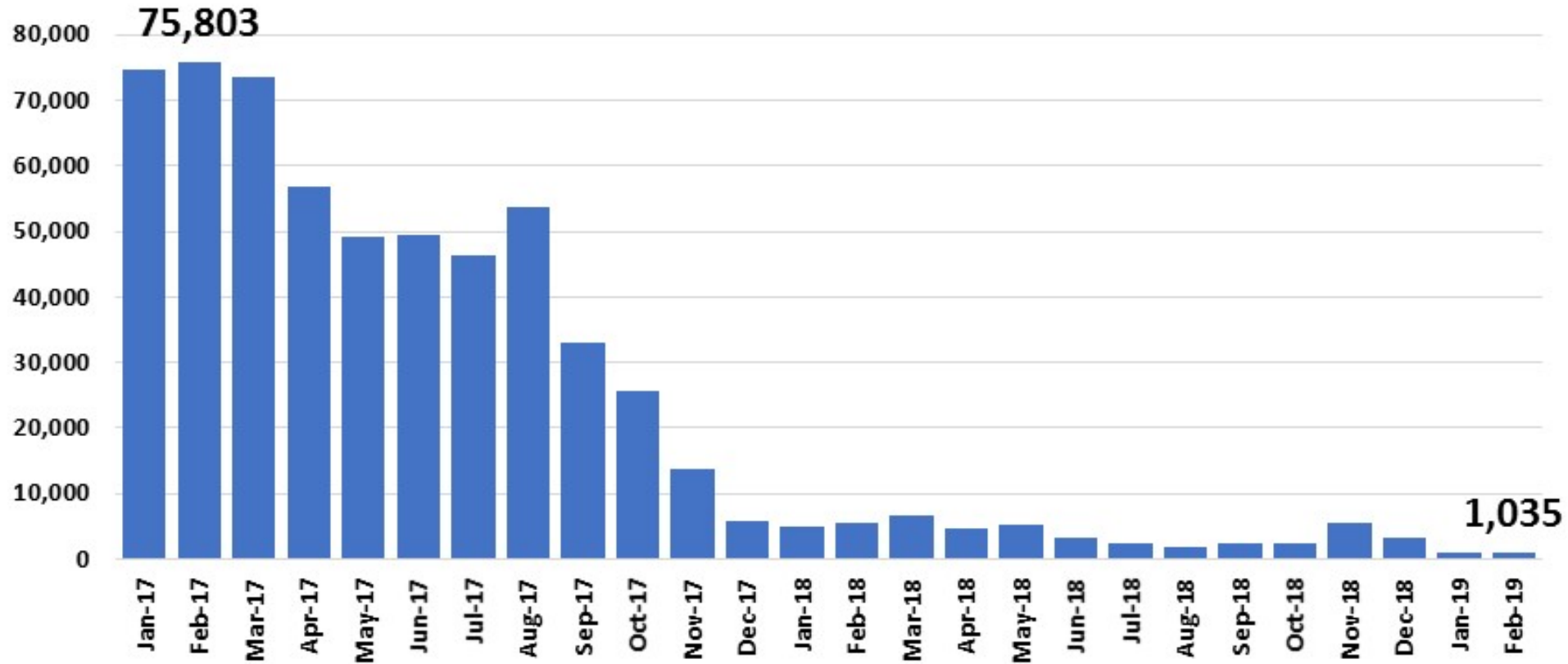
Sources: U.S. Census Bureau/U.S. International Trade Commission



Over-reliance on China Has Come at a Cost

Monthly U.S. Plastic Scrap Exports to Mainland China, Jan 2017 - Feb 2019 (metric tons)

Sources: U.S. Census Bureau/U.S. International Trade Commission

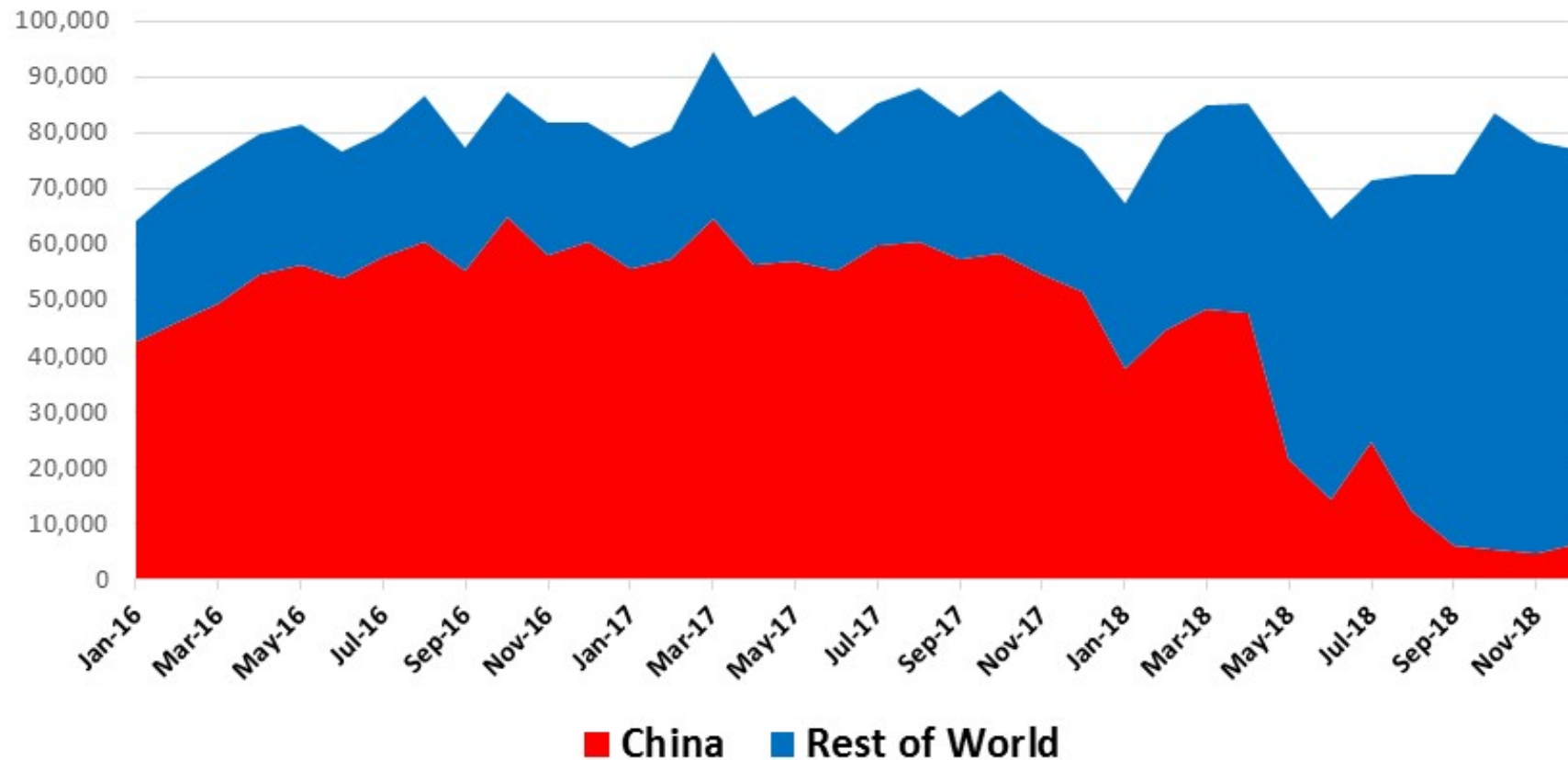


U.S. Copper Scrap Exports

Monthly U.S. Copper Scrap Exports to China and RoW, 2016-2018

Metric tons

Sources: U.S. Census Bureau/U.S. International Trade Commission

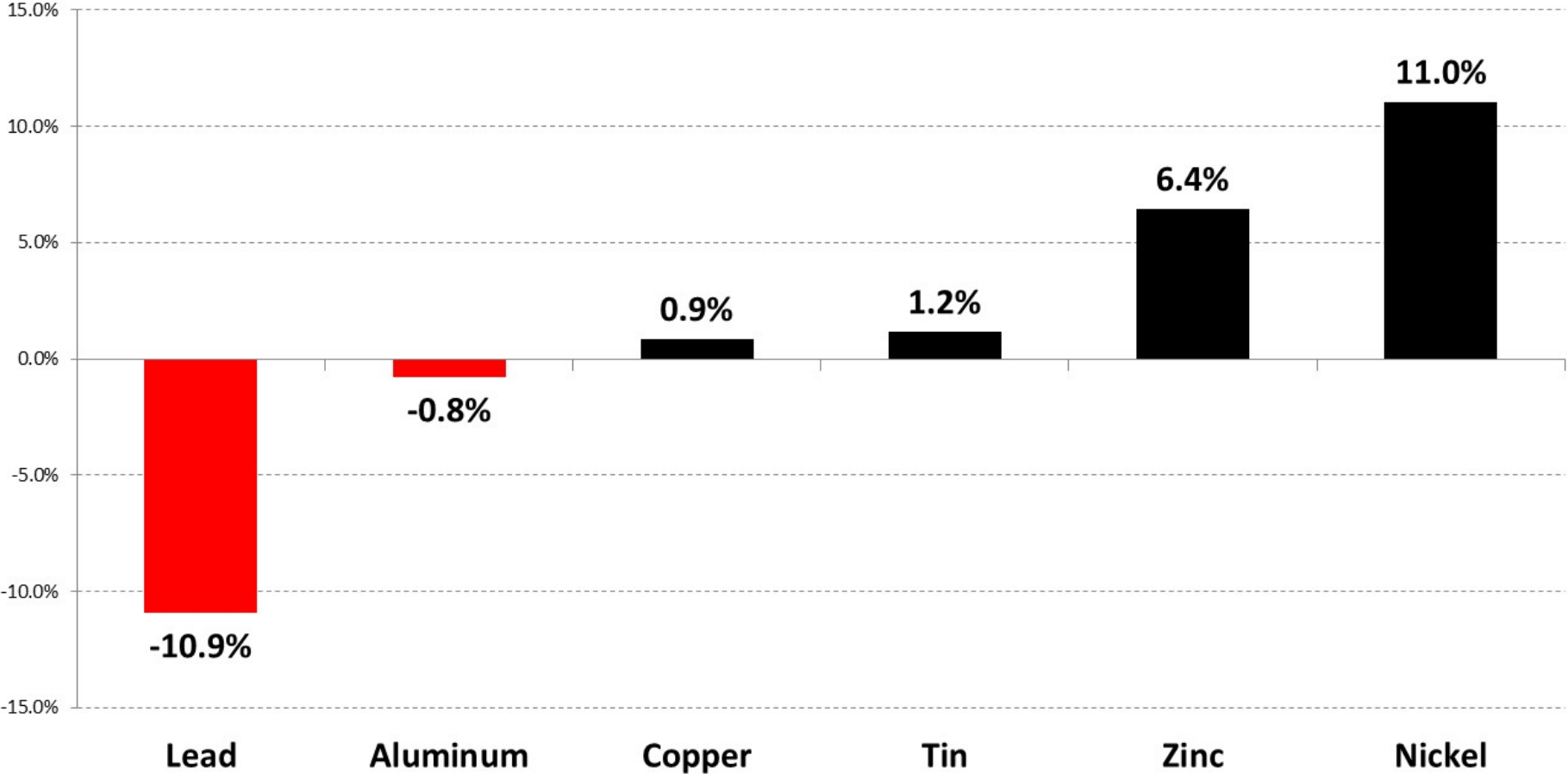


Cu Scrap Export Recap:

- Shipments to mainland China down 60% in 2018, marked decline in 2H
- Largest growth markets were Malaysia, Korea, Japan, Taiwan, India.
- Total Bare Bright exports up 80% by volume, other grades (mixed copper and alloy solids and turnings) down more than 30%.

YTD LME Nonferrous Prices

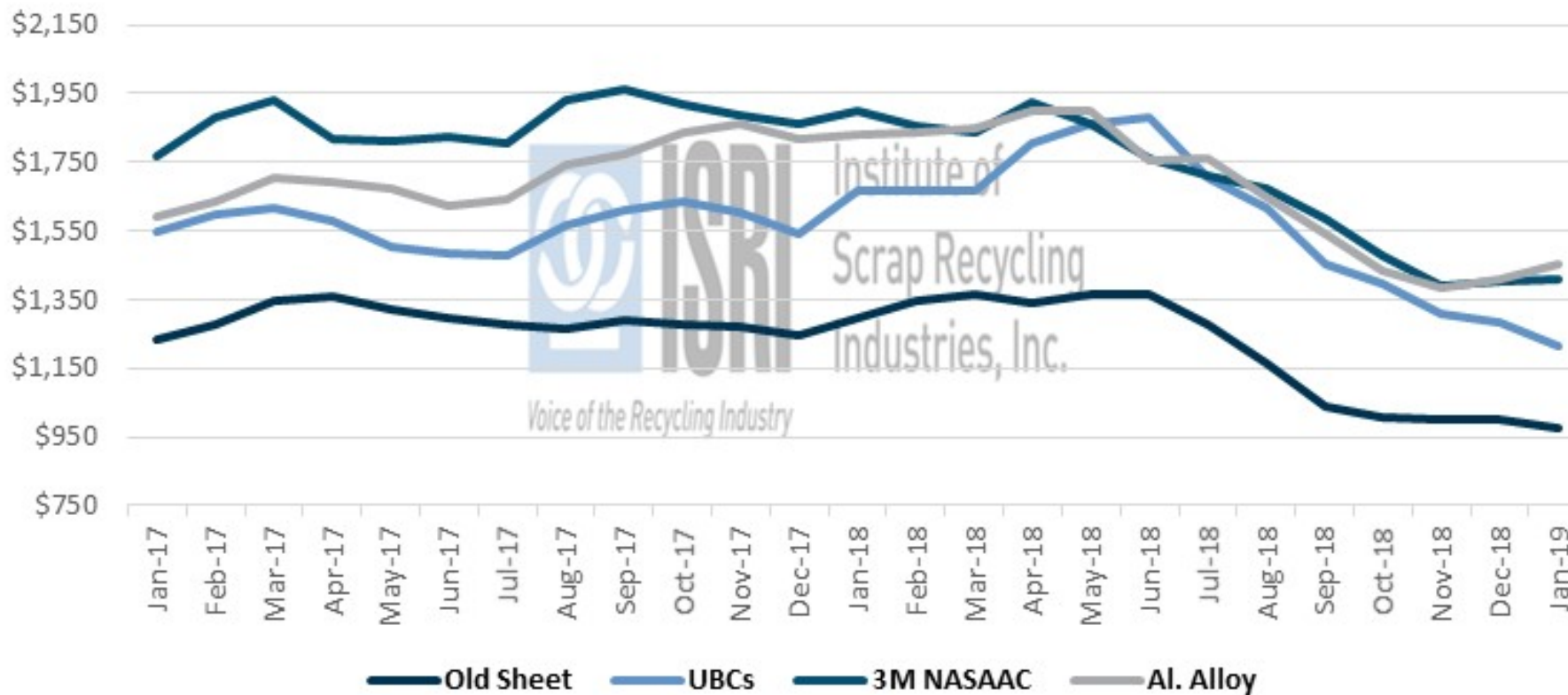
YTD 2019 Percentage CHG in LME Official 3-Mo. Nonferrous Metal Asking Prices through May 15, 2019 (%)



Aluminum Alloy and Scrap Price Trends

Aluminum Pricing Trends

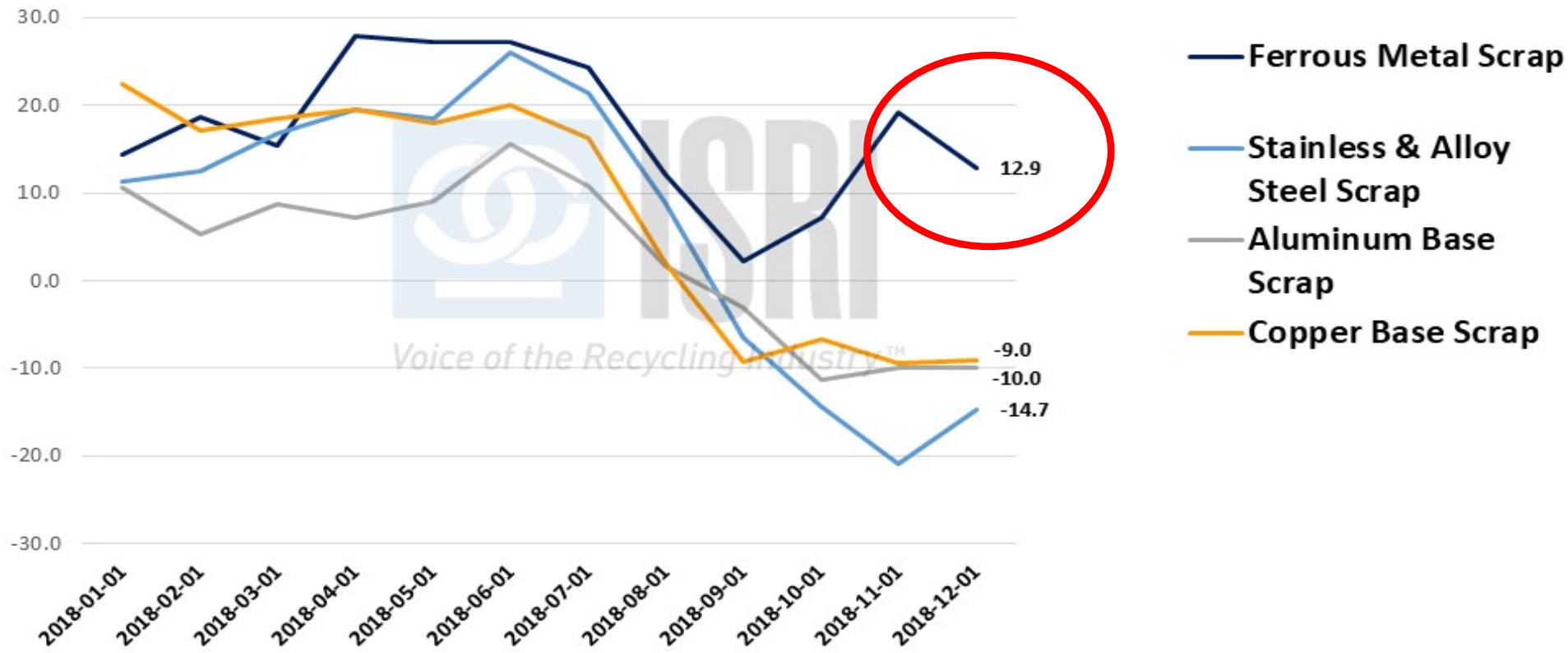
(\$/metric ton - AMM, LME)



Sources: LME, AMM.

Ferrous Scrap Prices Outperformed Other Metals in 2018

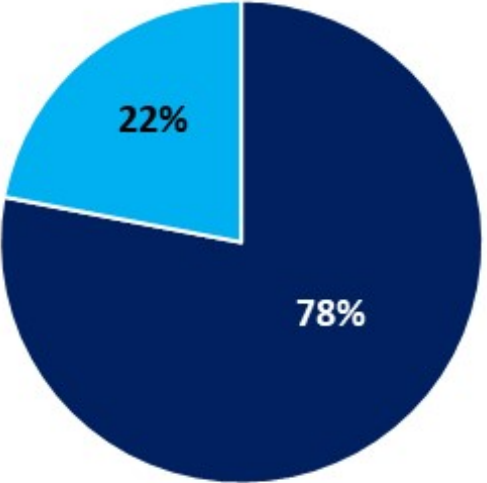
Year-on-Year Percentage Change in Monthly U.S. Metal Scrap Producer Price Indexes, Jan-Dec 2018
Source: Bureau of Labor Statistics



Most of the Scrap Processed in the U.S. Stays in the U.S.

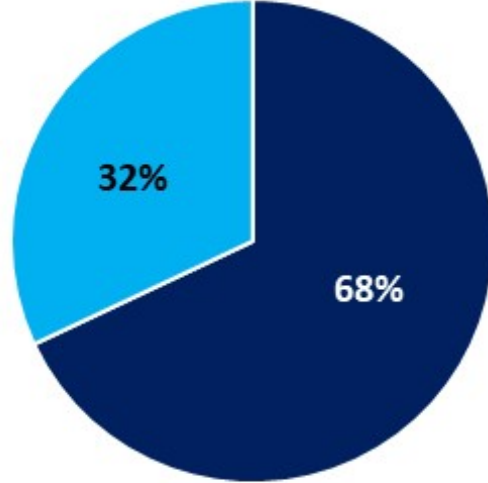
On Average, Approximately 70% of Recyclables Processed in the U.S. are Consumed Here As Well

Steel Scrap



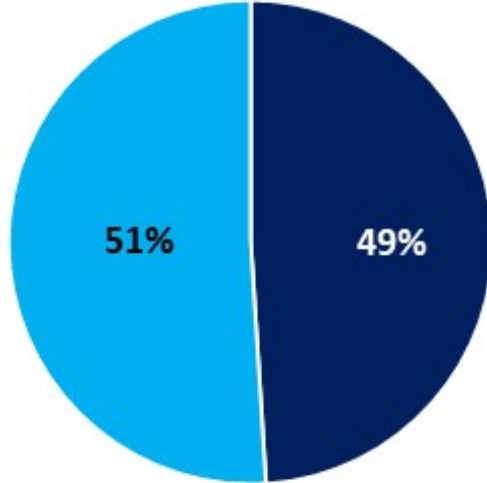
■ Domestic Use ■ Export

Aluminum Scrap



■ Domestic Use ■ Export

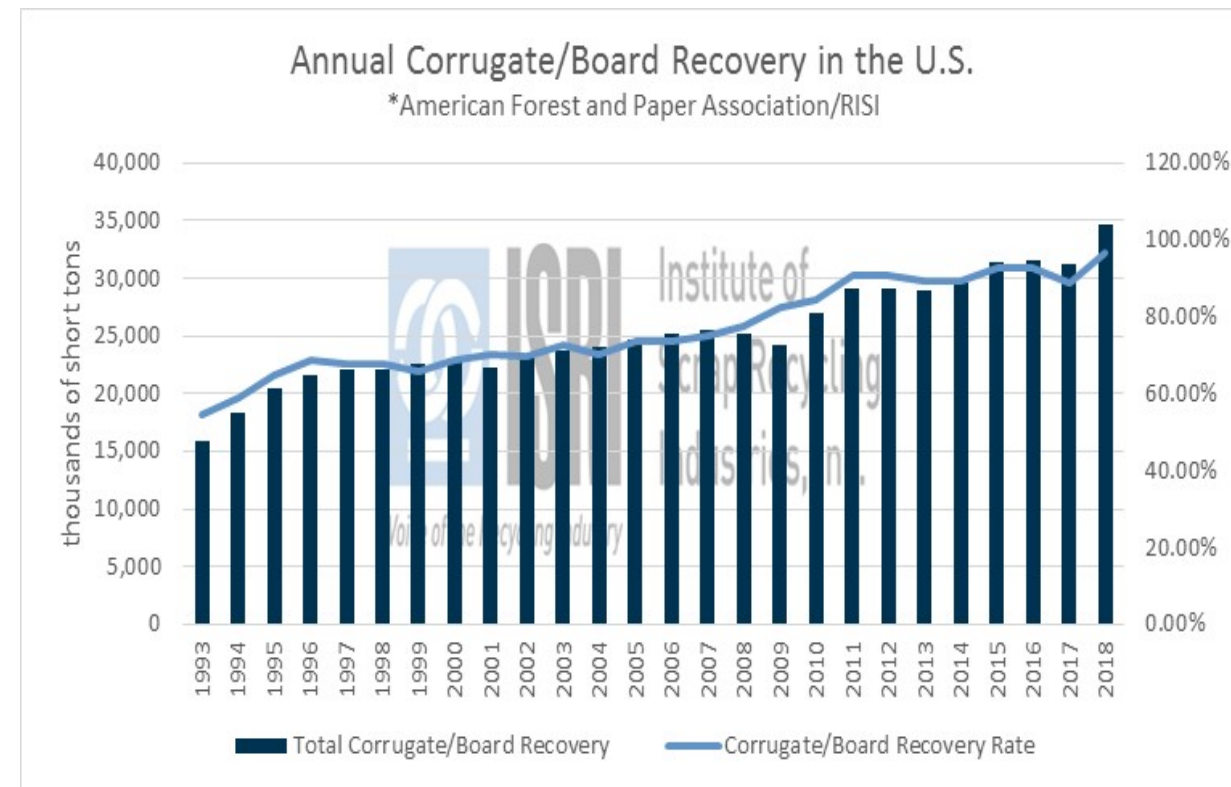
Copper Scrap



■ Domestic Use ■ Export

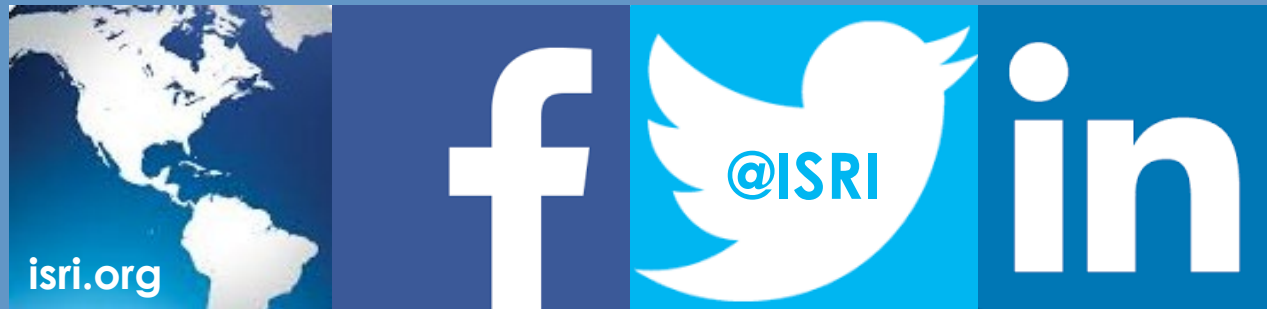
Rising U.S. Paper Recovery Rates, But Challenges Persist

- For paper recyclers, 2018 was defined by the search for alternative markets, the move to repatriate or improve processing capacity by attracting capital investments, and their efforts to work with municipal governments to establish more resilient recycling systems.
- Domestically, the American Forest & Paper Association (Washington, D.C.) reports that the U.S. paper recovery rates hit a thirty year high of 68.1 percent in 2018.
- But the demand void created by China's import restrictions created a major shift towards higher quality bulk grades. This created a glut of high quality OCC that was competing with itself to get into China. Export volumes for corrugated grades and pulp substitutes were up 27% and 49%, respectively, over 2017.
- India, Indonesia South Korea, Vietnam, Taiwan, and Thailand saw dramatic increases in their demand for U.S. recovered paper exports.



- For recyclers, tight labor markets, ongoing transportation headaches, and uncertainty on trade remain front and center.
- The strained U.S.-China trade relationship and other global economic challenges have only accelerated the industry restructuring that was already underway.
- In the private sector, industry consolidation has continued as larger recycling companies compete to obtain profitable operations and expand their footprints.
- For residential recycling programs, the disconnect between which materials communities want to recycle and which materials recyclers can profitably market has come to a head.
- Focus on **QUALITY** and consistency to meet consumer demands at home and abroad has become the key, along with the need to educate the public, policymakers, and the press about recycling.
- Recyclers are increasingly focused on (new and end) market development and the targeted investments required to produce high-quality recycled commodities.

THANK YOU



Institute of Scrap Recycling Industries, Inc